

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-6: (canceled)

7. (currently amended) An apparatus for heating and melting a solid lubricant mass lubricants in a delivery drum (4), comprising:

a heating element (1) composed of armored resistors shaped as concentric rings (1') and junction spokes (1");

a hoist (2) adapted to lower and raise said heating element into and out of said drum (4);

at least one vertical rod ~~rods~~ (6) that connects said heating element to components of said hoist, wherein said at least one vertical rod ~~rods~~ is ~~are~~ not heated;

a first thermal sensor (5) operatively connected with said heating element (1) kept at a temperature T1 controlled by means of said first thermal sensor;

a second thermal sensor (7) mounted on said at least one vertical rod ~~rods~~ (6) which regulates a maintenance temperature T2 when temperature control from first thermal sensor (5) passes to said second thermal sensor after an additional time in order to allow the entire solid lubricant mass to melt;

a transfer pump (8) for withdrawing melted lubricant from said drum (4) via a suction tube (11);

a bottom valve (9) mounted at the foot of said suction tube (11); and

a lubricant delivery tube (10) connected to an output side of said pump
(8),

wherein said first thermal sensor is configured to control the temperature of said heating element at a melting temperature and said second thermal sensor is configured to thereafter control the heating element at a maintenance temperature, wherein said temperatures are predetermined for melting and maintaining liquefying said lubricant but are such as to prevent harmful overheating thereof.

8. (previously presented) An apparatus according to claim 7, wherein said heating element (1) is subjected to thrust derived from its own weight and the weight of movable masses of said vertical rods (6), components of said hoist (2), said transfer pump (8) and said suction tube (11).

9. (previously presented) An apparatus according to claim 7, wherein said delivery tube (10) is coaxially disposed in a jacket, and wherein a diathermic fluid is adapted to circulate within said jacket for heating said delivery tube.

10. (currently amended) A method of operating an apparatus for heating and melting a solid lubricants lubricant mass in a delivery drum, the apparatus comprising a heating element composed of armored resistors shaped as concentric rings and junction spokes; a hoist adapted to lower and raise said heating element into and out of said drum; at least one vertical rod ~~rods~~ that connects said heating element to components of said hoist, wherein said at least one vertical rod ~~rods~~ is not heated ~~are unheated~~; a first thermal sensor operatively connected with said

heating element kept at a temperature T1 controlled by means of said first thermal sensor; a second thermal sensor mounted on said at least one vertical rod rods which regulates a maintenance temperature T2 when temperature control passes from first thermal sensor to said second thermal sensor after an additional time in order to allow the entire solid lubricant mass to melt; a transfer pump for withdrawing melted lubricant from said drum via a suction tube; a bottom valve mounted at a the foot of said suction tube; and a lubricant delivery tube connected to an output side of said pump, the method including the steps of:

positioning the heating element on an upper surface of the solid lubricant contained in the drum such that the heating element progressively sinks into the solid lubricant mass and reaches the bottom of the drum, thereby liquefying the entire solid lubricant mass; and

controlling the temperature of said heating element by means of said first ~~and~~ second thermal sensor sensors at a melting temperature and thereafter of said second thermal sensor at a maintenance temperature ~~respectively~~, wherein said temperatures are predetermined for melting and maintaining liquefying said lubricant lubricants but are such as to prevent harmful overheating thereof.

11. (currently amended) A method according to claim 10, wherein after said heating element (1) has reached a the bottom ~~dead-center~~ of said drum upon at least substantial melting of the entire mass of said lubricant, said first thermal sensor keeps said heating element at said melting temperature for an additional predetermined time until the entire mass of said lubricant is melted.

12. (currently amended) A method according to claim 11, wherein temperature control for the additional predetermined time passes to said second thermal sensor (7) which is mounted on said at least one vertical rod ~~rods~~ (6) at approximately one third of ~~their~~ its height as measured from a the bottom thereof, and wherein after the entire mass of said lubricant has been melted, said second sensor keeps said heating element at said maintenance temperature.